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Critical Appraisal of Caval Valve Implantation Procedure in 7 Cases of Torrential Tricuspid Regurgitation

LETTER TO THE EDITOR

To the Editor,

We read with interest the recent case series by Bozbaş et al[1] describing their experience with caval valve implantation (CAVI) using the TricValve system in 7 patients with torrential tricuspid regurgitation. The authors are to be commended for providing a detailed procedural description and for contributing valuable early data from Türkiye on this emerging therapy for a highly challenging patient population. Nonetheless, we would like to offer several critical reflections and suggestions that may strengthen the interpretation of their findings and better contextualize them within the existing literature.

First, while the authors correctly note that heterotopic (caval) valve implantation represents an option for patients ineligible for surgical repair or orthotopic replacement due to massive coaptation gaps, they present their series largely descriptively without systematic outcome reporting beyond anecdotal early clinical improvement. Apart from subjective NYHA class improvement, no objective exercise testing, 6-minute walk distances, or standardized quality-of-life measures are reported. Also, while they report a procedural RA–IVC gradient as a success marker, there is no systematic pre/post hemodynamic follow-up to demonstrate sustained benefit. Recent multicenter studies such as TRICUS-EURO[2] and Blasco-Turrión et al[3] have emphasized not only functional class improvement but also objective hemodynamic endpoints and right atrial pressure measurements at follow-up. It would greatly benefit the reader if this Turkish series similarly reported serial echocardiographic parameters (e.g., right ventricular function via TAPSE or FAC), biomarkers (e.g., NT-proBNP), and right atrial pressures before and after CAVI in a standardized fashion. Without such data, conclusions about efficacy remain limited.

Second, while the authors mention TRI-SCORE to estimate perioperative risk, they do not discuss whether high TRI-SCORE patients uniformly benefit from CAVI. Their own series includes a patient with a TRI-SCORE of 48 who died within a week. This raises important questions about patient selection. In TRICUS-EURO[2] and TRISCEND[4] studies, excessively advanced right ventricular dysfunction and severe end-organ failure have been identified as predictors of poor outcome even with transcatheter therapies. A more critical discussion of thresholds for futility—and criteria for identifying patients too advanced for benefit—would be valuable.

Third, while the procedural step-by-step detail is commendable, no mention is made of learning curve issues, operator experience, procedure duration, hospital stay, or peri-procedural/early post-procedural complications (e.g., bleeding, vascular access issues, device migration, thrombosis) beyond one mortality. International series have reported vascular complications, device migration,[5] and even valve embolization, underscoring the need to report these systematically.

Finally, although the authors appropriately cite the CE-mark approval for TricValve in 2021, they might have noted the device remains investigational in many jurisdictions, with limited long-term data. The need for robust randomized trials

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comparing CAVI with optimized medical therapy or edge-to-edge repair in borderline cases remains pressing. Without such data, widespread adoption should proceed cautiously.

In conclusion, Bozbaş et al[1] provide an important initial experience with CAVI in Türkiye. Nevertheless, for the field to advance meaningfully, future reports should aim for more rigorous outcome collection, clearer patient selection criteria, and transparent complication reporting. We encourage the authors and others to pursue multicenter registries or participation in international trials to strengthen the evidence base for this promising but still maturing therapy.

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